

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip, said male luer tip encircled by an annular locking flange, said male luer tip and said flange defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper end opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing, said housing including a first upper edge portion having an outside surface of generally constant first diameter, and a second lower portion spaced from said upper edge portion and having an outside surface of a generally constant second diameter, said second diameter being larger than said first diameter, said housing including a third intermediate portion extending from said distal edge portion to said second portion, said third portion having an outside surface with a changing diameter;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be easily wipeable, a second extension portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, said valve having a third extension portion attached to one of said extension portion and a lower surface of said radial portion and extending downward, a lower end portion of said extension portion attached to said housing to form a sealed second passageway within said extension portion, said extension portion and said housing defining a generally annular space between said extension portion and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum said first portion and said second portion elastically extend about the luer tip and form a seal about said luer tip and allow fluid to be injected from said tip into said second passageway, the attachment of said lower end portion of said extension portion to said housing being such that fluid injected into said second passageway flows through said housing without flowing into said annular space.

Claim 2 (original) The connector device of claim 1 wherein said valve includes a septum having an annular skirt attached to said first portion, said skirt extending over and attached to an outside surface of said housing proximate said opening.

Claim 3 (original) The connector device of claim 2 wherein said septum includes an annular channel formed by said skirt and said first portion, a distal edge portion of said housing received in said channel.

Claim 4 (original) The connector device of claim 3 wherein said distal edge portion forms a distal landing received in said channel, at least a portion of said distal landing being attached to said septum.

Claim 5 (original) The connector of claim 4 wherein the entire length of said landing is attached to said septum.

Claim 6 (original) The connector device of claim 5 wherein said connector includes a bonding agent to attach said outside surface of said housing and said landing to said septum.

Claim 7 (original) The connector device of claim 1 wherein said second portion of said resealable valve is formed with a generally rectangular cross section in the proximate direction.

Claim 8 (original) The connector device of claim 1 wherein said valve includes a septum having an annular skirt attached to said first portion, said skirt extending over and attached to an outside surface of said housing proximate said opening.

Claim 9 (original) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip and having a generally annular flange disposed generally about said male luer tip and defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the generally cylindrical space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including,

a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be easily wipeable,

a second portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, and

a third extension portion attached to said lower surface of said first portion and extending downward, a lower end portion of said third portion attached to said housing to form a sealed second passageway within said extension portion, said second portion extending within said second sealed passageway portion, said third extension portion and said housing defining a generally annular space between said extension portion and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum said first portion and said second portion elastically extend about the luer tip and form a seal about said luer tip and allow fluid to be injected from said tip into said second passageway, the attachment of said lower end portion of said extension portion to said housing being such that fluid injected into said second passageway flows through said housing without flowing into said annular space.

Claim 10 (original) The connector device of claim 9 wherein said septum includes an annular channel formed by said skirt and said first portion, a distal edge portion of said housing received in said channel.

Claim 11 (original) The connector device of claim 10 wherein said distal edge portion forms a distal landing received in said channel, at least a portion of said distal landing being attached to said septum.

Claim 12 (original) The connector of claim 11 wherein the entire length of said landing is attached to said septum.

Claim 13 (original) The connector device of claim 12 wherein said connector includes a bonding agent to attach said outside surface of said housing and said landing to said septum.

Claim 14 (original) The connector device of claim 13 wherein said second portion of said resealable valve is formed with a generally rectangular cross section in the proximate direction.

Claim 15 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip, said male luer tip encircled by an annular locking flange, said male luer tip and said flange defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper end opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper

surface radially extending across said opening, said upper surface being disposed and shaped to be easily wipeable, a second extension portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, said valve having a third extension portion attached to one of said second extension portion and a lower surface of said first portion and extending downward, a lower end portion of said third extension portion attached to said housing to form a sealed second passageway, said valve and said housing defining a generally annular space between said valve and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum said first portion and said second extension portion elastically extend about the luer tip and form a seal about said luer tip and allow fluid to be injected from said tip, the attachment of said lower end portion of said third extension portion to said housing being such that fluid injected from said tip flows through said housing without flowing into said annular space.

Claim 16 (previously presented) The connector device of claim 15 wherein said septum includes an annular channel formed by said skirt and said first portion, a distal edge portion of said housing received in said channel.

Claim 17 (previously presented) The connector device of claim 15 wherein said distal edge portion forms a distal landing received in said channel, at least a portion of said distal landing being attached to said septum.

Claim 18 (previously presented) The connector of claim 17 wherein the entire length of said landing is attached to said septum.

Claim 19 (previously presented) The connector device of claim 18 wherein said connector includes a bonding agent to attach said outside surface of said housing and said landing to said septum.

Claim 20 (previously presented) The connector device of claim 15 wherein said second portion of said resealable valve is formed with a generally rectangular cross section in the proximate direction.

Claim 21 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip and having a generally annular flange disposed generally about said male luer tip and defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the generally cylindrical space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be wipeable, a second portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, and a third extension portion attached to a lower surface of said second portion and extending downward, a lower end portion of said third extension portion attached to said housing to form a sealed second passageway within said extension portion, at least portions of said valve and said housing defining a generally annular space between said valve and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum into said second passageway said first portion and said second portion elastically extend about the luer tip and form a seal about said luer tip, the attachment of said lower end portion of said third extension portion to said housing being such that fluid injected from said tip flows through said housing without flowing into said annular space.

Claim 22 (previously presented) The connector device of claim 21 wherein said septum includes an annular channel formed by said skirt and said first portion, a distal edge portion of said housing received in said channel.

Claim 23 (previously presented) The connector device of claim 21 wherein said distal edge portion forms a distal landing received in said channel, at least a portion of said distal landing being attached to said septum.

Claim 24 (previously presented) The connector of claim 23 wherein the entire length of said landing is attached to said septum.

Claim 25 (previously presented) The connector device of claim 24 wherein said connector includes a bonding agent to attach said outside surface of said housing and said landing to said septum.

Claim 26 (previously presented) The connector device of claim 25 wherein said second portion of said resealable valve is formed with a generally rectangular cross section in the proximate direction.

Claim 27 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip, said male luer tip encircled by an annular locking flange, said male luer tip and said flange defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper end opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper

surface radially extending across said opening, said upper surface being disposed and shaped to be wipeable, a second extension portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, said valve having a third extension portion attached to said extension portion and sealingly attached to said housing, at least a portion of said valve and said housing defining a generally annular space between said valve and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum and within said second passageway, said first portion and said second extension portion elastically extend about the luer tip and form a seal about said luer tip, the attachment of said lower end portion of said extension portion to said housing being such that when fluid is then injected from said tip, the fluid flows through said housing without flowing into said annular space.

Claim 28 (previously presented) The connector device of claim 27 wherein when the luer tip is inserted into the valve and fluid is injected through said tip upon removal of the luer tip, at least some fluid remaining in the second passageway is forced into the housing.

Claim 29 (previously presented) The connector device of claim 27 wherein the third extension portion is connected to the second extension portion.

Claim 30 (previously presented) The connector device of claim 27 wherein the third extension portion is integral with the second extension portion.

Claim 31 (previously presented) The connector device of claim 27 wherein the third extension device extends for a length greater than a diameter of the upper surface.

Claim 32 (previously presented) The connector device of claim 27 including a fourth portion that is connected to the third extension.

Claim 33 (previously presented) The connector device of claim 27 including a collapsing member located in the annular space.

Claim 34 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip, said male luer tip encircled by an annular locking flange, said male luer tip and said flange defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper end opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be wipeable, a second extension portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, said valve having a third extension portion attached to said second extension portion and extending downward, a lower end portion of said extension portion attached to said housing to form a sealed second passageway within said extension portion, said valve and said housing defining a generally annular space between said extension portion and said valve;

a collapsing member connected to the third extension portion and located in the annular space; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum said first portion and said second extension portion elastically extend about the luer tip and form a seal about said luer tip and allow fluid to be injected from said tip into said second passageway, the attachment of said lower end portion of said extension portion to said housing being such that fluid injected into said second passageway flows through said housing without flowing into said annular space.

Claim 35 (previously presented) The connector device of claim 34 wherein upon removal of the luer tip, at least some of the fluid remaining in the second passageway is forced into the housing.

Claim 36 (previously presented) The connector device of claim 34 wherein the collapsing member is a split collar.

Claim 37 (previously presented) The connector device of claim 34 wherein the third extension portion is connected to the second extension portion.

Claim 38 (previously presented) The connector device of claim 34 wherein the third extension portion is integral with the second extension portion.

Claim 39 (previously presented) The connector device of claim 34 wherein the third extension device extends for a length greater than a diameter of the upper surface.

Claim 40 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip, said male luer tip encircled by an annular locking flange, said male luer tip and said flange defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper end opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be wipeable, a second extension portion extending generally vertically downward within said passageway from a lower surface of said first portion, said valve having a third extension portion

attached to the second extension portion and extending downward, a lower end portion of said third extension portion being so oriented with respect to said housing to form a sealed second passageway, said valve and said housing defining a generally annular space between said valve and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum said first portion and said second extension portion elastically extend about the luer tip and form a seal about said luer tip and allow fluid to be injected from said tip into said second passageway, the lower end portion of said extension portion and said housing being oriented such that fluid injected into said second passageway flows through said housing without flowing into said annular space.

Claim 41 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip, said male luer tip encircled by an annular locking flange, said male luer tip and said flange defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper end opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be easily wipeable, a second portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, said valve having a portion attached to said second portion and being attached to said housing such that said valve forms a sealed second passageway and said valve portion and said housing defining a generally annular space between said valve and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum said first portion and said second portion

elastically extend about the luer tip and form a seal about said luer tip and allow fluid to be injected from said tip, the attachment of said valve to said housing being such that fluid injected from said tip flows through said housing without flowing into said annular space.

Claim 42 (previously presented) The connector device of claim 41 wherein said septum includes an annular channel formed by said skirt and said first portion, a distal edge portion of said housing received in said channel.

Claim 43 (previously presented) The connector device of claim 41 wherein said distal edge portion forms a distal landing received in said channel, at least a portion of said distal landing being attached to said septum.

Claim 44 (previously presented) The connector of claim 43 wherein the entire length of said distal landing is attached to said septum.

Claim 45 (previously presented) The connector device of claim 44 wherein said connector includes a bonding agent to attach said outside surface of said housing and said distal landing to said septum.

Claim 46 (previously presented) The connector device of claim 41 wherein said second portion of said resealable valve is formed with a generally rectangular cross section in the proximate direction.

Claim 47 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip and having a generally annular flange disposed generally about said male luer tip and defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the generally cylindrical space defined by the male luer assembly when the male luer tip is inserted downward

into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be wipeable, a second portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, and a third portion attached to a lower surface of said second portion, a portion of said third portion attached to said housing to form a sealed second passageway, at least portions of said valve and said housing defining a generally annular space between said valve and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum into said second passageway said first portion and said second portion elastically extend about the luer tip and form a seal about said luer tip, the attachment of said lower end portion of said third portion to said housing being such that fluid injected from said tip does not flow into said annular space.

Claim 48 (previously presented) The connector device of claim 47 wherein said septum includes an annular channel formed by said skirt and said first portion, a distal edge portion of said housing received in said channel.

Claim 49 (previously presented) The connector device of claim 47 wherein said distal edge portion forms a distal landing received in said channel, at least a portion of said distal landing being attached to said septum.

Claim 50 (previously presented) The connector of claim 49 wherein the entire length of said landing is attached to said septum.

Claim 51 (previously presented) The connector device of claim 50 wherein said connector includes a bonding agent to attach said outside surface of said housing and said landing to said septum.

Claim 52 (previously presented) The connector device of claim 51 wherein said second portion of said resealable valve is formed with a generally rectangular cross section in the proximate direction.

Claim 53 (previously presented) A connector device for establishing a sealed connection with a male luer assembly configured to conform to ISO standards, said assembly including a male luer tip, said male luer tip encircled by an annular locking flange, said male luer tip and said flange defining a generally cylindrical space between said flange and said tip, said connector device comprising:

a housing forming an upper end opening and a central first passageway sized to receive the male luer tip, said housing having an upper end portion configured to fit within the space defined by the male luer assembly when the male luer tip is inserted downward into said opening, said first central passageway extending from said opening in a downward direction within said housing;

a resealable valve resiliently restrained relative to said housing, said valve including a first portion configured to seal said opening prior to insertion of said tip and having an upper surface radially extending across said opening, said upper surface being disposed and shaped to be wipeable, a second portion integral with said first portion and extending generally vertically downward within said passageway from a lower surface of said first portion, said valve having a third portion sealingly attached to said housing, at least a portion of said valve and said housing defining a generally annular space between said valve and said housing; and

an opening formed in said valve such that when the luer tip is inserted downward into said opening in said housing and through said septum, said first portion and said second extension portion elastically extend about the luer tip and form a seal about said luer tip, the attachment of said third portion to said housing being such that when fluid is then injected from said tip, the fluid flows through said housing without flowing into said annular space.

Claim 54 (previously presented) The connector device of claim 53 wherein the third portion is integral with the second portion.

Claim 55 (new) The connector device of claim 15 wherein said second extension portion is in a stretched configuration.

Claim 56 (new) The connector device of claim 15 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 57 (new) The connector device of claim 15 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.

Claim 58 (new) The connector device of claim 21 wherein said second extension portion is in a stretched configuration.

Claim 59 (new) The connector device of claim 21 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 60 (new) The connector device of claim 21 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.

Claim 61 (new) The connector device of claim 27 wherein said second extension portion is in a stretched configuration.

Claim 62 (new) The connector device of claim 27 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 63 (new) The connector device of claim 27 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.

Claim 64 (new) The connector device of claim 34 wherein said second extension portion is in a stretched configuration.

Claim 65 (new) The connector device of claim 34 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 66 (new) The connector device of claim 34 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.

Claim 67 (new) The connector device of claim 40 wherein said second extension portion is in a stretched configuration.

Claim 68 (new) The connector device of claim 40 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 69 (new) The connector device of claim 40 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.

Claim 70 (new) The connector device of claim 41 wherein said second extension portion is in a stretched configuration.

Claim 71 (new) The connector device of claim 41 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 72 (new) The connector device of claim 41 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.

Claim 73 (new) The connector device of claim 47 wherein said second extension portion is in a stretched configuration.

Claim 74 (new) The connector device of claim 47 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 75 (new) The connector device of claim 47 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.

Claim 76 (new) The connector device of claim 53 wherein said second extension portion is in a stretched configuration.

Claim 77 (new) The connector device of claim 53 wherein said second extension portion is stretched so as to hinder buckling of said second extension when said luer tip is inserted downward into said opening.

Claim 78 (new) The connector device of claim 53 wherein said second extension portion is stretched during assembly of the connector and attached to said housing in a stretched configuration.